REMARKS

This paper is being provided in response to the Office Action dated March 24, 2009, for the above-referenced application. In this response, Applicants have cancelled claims 32, 48 and 64 (claims 1-28, 31, 47 and 63 having been previously cancelled) without prejudice or disclaimer of the subject matter thereof, and amended claims 29, 33, 45, 49, 61, 65, 73, 74, 80 and 86 to clarify that which Applicants consider to be the presently-claimed invention. Applicants respectfully submit that the amendments to the claims are fully supported by the originally-filed specification, consistent with the discussion herein.

As a preliminary matter, Applicants note that the Office Action Summary indicates that "Claims 29, 30, 32-46 and 48-62" are pending and have been rejected. However, Applicants point out that claims 29, 30, 32-46, 48-62 and 64-91 were pending as of the date of the Office Action and these are the claims that have been examined, as discussed in the detailed portion of the Office Action.

The rejection of claims 29, 30, 32-44 under 35 U.S.C. 112, first paragraph, has been addressed by amendments contained herein and is otherwise hereby traversed. The Office Action (page 2) states: "the specification does not describe how 'first information' can simultaneously...be 'a manner of accessing' and a 'retention class'". Applicants have clarified that the first information includes information identifying a retention class. Applicants submit, however, that the Office Action's query of how the first information can simultaneously **be** a manner of accessing and a retention class is somewhat unclear. The first information is recited as *identifying* a manner of accessing second information and, as amended herein, includes

information *identifying* a retention class. Discussions of first information identifying a manner of accessing second information and identifying a retention class are contained throughout the specification. For one of many examples, see page 10, lines 21-30 of the originally-filed specification that discusses that: "When a host computer sends a request to store a unit of data on the storage system, it may indicate the corresponding retention indirectly by specifying the class to which the unit of data belongs. The retention period for an entire class of data units may be changed by altering the retention period specified for the entire class." Accordingly, Applicants respectfully submit that the specification provides a fully enabling written description of the present claims as would be fully understood by one of ordinary skill in the art. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

The rejection of claims 29, 30, 32-46, 48-62 and 64-91 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent App. Pub. No. 2005/0055518 to Hochberg, et al. (hereinafter "Hochberg") in view of U.S. Patent No. 6,185,576 to McIntosh (hereinafter "McIntosh") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

Independent claim 29, as amended herein, recites a method of processing data in a computer system comprising at least one host and at least one storage system. The method includes receiving a request, from the host, to delete a unit of data stored on the storage system. In response to the request, it is determined whether a previously-defined retention period for the unit of data has expired. The determination includes retrieving first information, associated with the unit of data, that identifies a manner of accessing second information specifying the

previously-defined retention period for the unit of data, wherein the first information includes information identifying a retention class to which the unit of data belongs, wherein the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and wherein the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes. The determination further includes using the first information and the record stored on the at least one storage system to retrieve the second information specifying the previously-defined retention period for the unit of data. When it is determined that the retention period for the unit of data has not expired, the request to delete the unit of data is denied. Claims 30 and 33-44 depend directly or indirectly from independent claim 29.

Independent claim 45, as amended herein, recites at least one computer readable medium encoded with instructions that, when executed on a computer system, perform a method of processing data, the computer system comprising at least one host and at least one storage system. The method includes receiving a request, from the host, to delete a unit of data stored on the storage system. In response to the request, it is determined whether a previously-defined retention period for the unit of data has expired. The determination includes retrieving first information, associated with the unit of data, that identifies a manner of accessing second information specifying the previously-defined retention period for the unit of data, wherein the first information includes information identifying a retention class to which the unit of data belongs, wherein the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention

class cannot be deleted from and/or modified on the at least one storage system, and wherein the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes. The determination further includes using the first information and the record stored on the at least one storage system to retrieve the second information specifying the previously-defined retention period for the unit of data. When it is determined that the retention period for the unit of data has not expired, the request to delete the unit of data is denied. Claims 46 and 49-60 depend directly or indirectly from independent claim 45.

Independent claim 61, as amended herein, recites a storage system including at least one storage device to store a unit of data and at least one controller. The controller is adapted to receive a request to delete the unit of data; and in response to the request, determine whether a retention period for the unit of data has expired. The determination includes retrieving first information, associated with the unit of data, that identifies a manner of accessing second information specifying the previously-defined retention period for the un it of data, wherein the first information includes information identifying a retention class to which the unit of data belongs, wherein the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and wherein the at least one storage device stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes. The determination further includes using the first information and the record stored on the at least one storage device to retrieve the second information specifying the previously-defined retention period for the unit of data. When the

controller determines that the retention period for the unit of data has not expired, the request to delete the unit of data is denied. Claims 62 and 65-73 depend directly or indirectly from independent claim 61.

Independent claim 74, as amended herein, recites a method of processing data in a computer system comprising at least one host and at least one storage system that stores a plurality of data units belonging to a retention class, wherein the retention class specifies a retention period for each of the plurality of data units belonging to the retention class. The method includes transmitting a request from the at least one host to the at least one storage system to modify the retention period specified by the retention class, wherein the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and wherein the request to modify the retention period specified by the retention class causes a corresponding modification of the record thereby modifying a period of time during which the plurality of data units belonging to the retention class cannot be deleted from and/or modified on the at least one storage system. Claims 75-79 depend directly or indirectly from independent claim 74.

Independent claim 80, as amended herein, recites at least one computer readable medium encoded with instructions that, when executed on a computer system, cause the computer system to perform a method of processing data, the computer system comprising at least one host and at least one storage system that stores a plurality of data units belonging to a retention class, wherein the retention class specifies a retention period for each of the plurality of data units belonging to the retention class. The method includes transmitting a request from the at least one

host to the at least one storage system to modify the retention period specified by the retention class, wherein the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and wherein the request to modify the retention period specified by the retention class causes a corresponding modification of the record thereby modifying a period of time during which the plurality of data units belonging to the retention class cannot be deleted from and/or modified on the at least one storage system. Claims 81-85 depend directly or indirectly from independent claim 80.

Independent claim 86, as amended herein, recites a host computer for use in a computer system that include the host computer and at least one storage system that stores a plurality of data units belonging to a retention class, wherein the retention class specifies a retention period for each of the plurality of data units belonging to the retention class. The host computer includes a processor programmed to transmit a request to the at least one storage system to modify the retention period specified by the retention class, wherein the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and wherein the request to modify the retention period specified by the retention class causes a corresponding modification of the record thereby modifying a period of time during which the plurality of data units belonging to the retention class cannot be deleted from and/or modified on the at least one storage system. Claims 87-91 depend directly or indirectly from independent claim 86.

Hochberg discloses a method, system and program for retention management and protection of stored objects. The Office Action cites principally to Figure 8 of Hochberg in

which is disclosed operations of an archive program to handle a request to delete an archived object. Hochberg discloses that, when a request to delete an object is received, the object is deleted only if the retention period for the object ID has expired. The system accesses the expiration entry for the object in the expiration table and determines whether the current time minus the retention period start exceeds the retention period for the object. (See paragraph 0046 of Hochberg.)

McIntosh discloses an uniform subject classification system incorporating document management and records retention functions. The Office Action cites principally to McIntosh's Table II, beginning at col. 9, showing a representative classified retention schedule and further notes claims 1 and 5 of McIntosh as disclosing a retention period determined by governmental regulations and searching a document database by class code.

In Applicants' independent claim 29, Applicants recite at least the features of retrieving first information, associated with the unit of data, that identifies a manner of accessing second information specifying the previously-defined retention period for the unit of data, wherein the first information includes information identifying a retention class to which the unit of data belongs, wherein the second information is the previously-defined retention period for the retention class that defines a period of time during which units of data belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, and wherein the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and using the first information and the record stored on the at least one storage system to retrieve the second information specifying the previously-

defined retention period for the unit of data. As discussed by Applicants, for example, on page 10, lines 21-30, a set of classes may be defined for retention periods to be assigned to units of data to facilitate the changing of retention periods for large groups of data units. The system may maintain a record that associates each class with a specified retention period. When a host computer sends a request to store a unit of data on the storage system, it may indicate the corresponding retention indirectly by specifying the class to which the unit of data belongs. The retention period for an entire class of data units may be changed by altering the retention period specified for the class. Applicants have found this to be advantageous, in that a large class of data units can have their retention periods altered by simply updating the record for the class, and without individually altering the retention period of each unit of data in the class.

As noted above, Applicants have incorporated into independent claim 29 the features that the at least one storage system stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and that the first information and the record stored on the at least one storage system are used to retrieve the second information specifying the previously-defined retention period for the unit of data. In connection with former claims 32, 48 and 64 that recited features of accessing the record on the storage system to retrieve the previously-defined retention period, the Office Action cites to paragraph 0023 of Hochberg. Applicants submit that this cited portion of Hochberg, nor any other portion thereof, teaches or fairly suggests the above-noted features claimed by Applicants. Specifically, paragraph 0023 of Hochberg discloses that a deletion hold policy may be specified for an object to override a retention policy in order to prevent removal of an object, even if the object has expired according

to a defined retention period. The deletion hold applied to an archived object may subsequently be removed to allow that object to expire according to the archival policy defined for that object.

Applicants submit, however, that application of a deletion hold policy as described by Hochberg does not teach or fairly suggest the use of a record stored on a storage system that associates a plurality of previously-defined retention periods with a plurality of retention classes, and which may be used, in connection with first information including identification of a retention class of a unit of data, to retrieve second information specifying the previously-defined retention period for the unit of data. In particular, as discussed above, this system described and recited by Applicants advantageously allows for the retention period for an entire class of data units to be changed by altering the retention period specified for the class, and thereby, large numbers of data units can have their retentions periods by simply updating the record on the storage system, i.e. modifying the retention periods for the one or more classes of the data, and without individually altering the retention period of each unit of data in the one or more classes. Hochberg's above-noted system involving the deletion hold policy, or other archival policies of Hochberg, does not provide for these features, or the advantages thereof, like that recited by Applicants.

Furthermore, Applicants respectfully submit that the addition of McIntosh does not overcome the above-noted deficiencies of Hochberg with respect to Applicants' presently-claimed invention. The Office Action cites principally to McIntosh's Table II, beginning at col. 9, showing a representative classified retention schedule. At col. 8, lines 42-49, McIntosh discloses that changing the data for a particular class code in the class table also changes all documents associated with that class; however, McIntosh does not disclose at least the features of steps of

retrieving first information that includes information indentifying a retention class of a unit of data and using the first information and a record stored on the storage system to retrieve second information specifying the previously-defined retention period for the unit of data, in the manner as recited by Applicants and discussed in detail above.

The features of independent claim 29, and the claims depending therefrom, have been discussed above with respect to Hochberg and McIntosh, and Applicants submit that similar features are incorporated into Applicants' other independent claims 45, 61, 76, 80, 86. Accordingly, Applicants submit that the above-noted remarks are also applicable to these independent claims, and the claims depending therefrom. In particular, in connection with claims 76, 80 and 86, and the claims depending therefrom, Applicants submit that the cited references do not teach or fairly suggest that at least one storage device stores a record associating a plurality of previously-defined retention periods with a plurality of retention classes, and that a transmitted request to modify a retention period specified by a retention class (for each of a plurality of data units) that causes a modification of the record thereby modifying a period of time during which the plurality of data units belonging to the retention class cannot be deleted from and/or modified on the at least one storage system, as recited by Applicants.

Accordingly, Applicants respectfully submit that Hochberg and McIntosh, taken alone or in combination, do not teach or fairly suggest at least the above-noted features as recited by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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